

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2 5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 31 May 2001 (31.05.01)	
International application No. PCT/AU00/01210	Applicant's or agent's file reference 92948
International filing date (day/month/year) 05 October 2000 (05.10.00)	Priority date (day/month/year) 05 October 1999 (05.10.99)
Applicant RAGUSE, Burkhard et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

03 May 2001 (03.05.01)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Charlotte ENGER Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 27 AUG 2001

WIPO

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Applicant's or agent's file reference 92848/WJP	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU'00/01210	International Filing Date (<i>day/month/year</i>) 5 October 2000	Priority Date (<i>day/month/year</i>) 5 October 1999
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ C08J 5/18; C08F 6/12; C30B 1/02; H01L 21/20		
Applicant COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION et al		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 4 sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of sheet(s).
3.	This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application

Date of submission of the demand 3 May 2001	Date of completion of the report 17 August 2001
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer B CROUCH Telephone No. (02) 6283 2060

I. Basis of the report

1. With regard to the **elements** of the international application:*
- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
 pages , as amended (together with any statement) under Article 19,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , received on with the letter of
2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
4. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.
5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-38	YES
	Claims	NO
Inventive step (IS)	Claims 1-38	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-38	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)**NOVELTY : (N) CLAIMS 1-38**

(a) Derwent WPAT online abstract No. 99-215863/19 discloses crystalline syndiotactic styrene polymer in the form of nanoparticles and a matrix of atactic styrene polymer.

(b) Derwent WPAT online abstract No. 1999-372164/32 discloses polymer containing discrete dispersed nanoparticles for the production of colored film, bottles or plates.

(c) AU 29947/99 discloses metal nanoshells.

(d) US 5 711 803 discloses the preparation of a semiconductor thin film.

(e) AU 17433/97 discloses organically functionalized monodisperse nanocrystals of metals.

No individual citation or obvious combination of citations (a) - (e) disclose the matter of claims 1-38

INVENTIVE STEP : (IS) CLAIMS 1-38

As above.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 17 and 31 lack clarity.

I cannot determine the scope of these claims due to the use of the phrases 'such as' and 'e.g.'.

2. Claim 35 lacks clarity due to the phrase 'in which of the differing nanoparticles or linkers are such that ... film has non-linear conduction properties.'

What is the scope and meaning of this phrase?

3. The description lacks clarity.

(a) The scope of what material the nanoparticles are made from is not clear.

It appears the nanoparticles of the present invention are only those selected from the group consisting of metallic, semiconducting, insulating, and magnetic materials.

See page 6, line 2.(although this disclosure is written as preferred, it appears speculative to claim other types).

(b) It is not entirely clear to what 'field' the description refers to when describing the scope of the phrase 'linker molecules'.

See page 6, line 12.

4. The claims lack clarity in regard to the scope of the phrase 'linker molecules'.

Note: observation 3(b) above.

The scope of the term 'linker molecules' in the claims is not clear.

Perhaps if the claims were limited to those molecules disclosed on page 6, lines 13-21 this issue may be clarified.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU00/01210

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
DE	19756790	EP	1042393	WO	9932546		
DE	19741496	AU	97415/98	WO	9915587		
AU	29947/99	WO	9946351				
US	5711803	AU	73698/96	WO	9712082	US	6126740
		AU	23381/99				
AU	17433/97	CA	2241183	EP	914244	WO	9724224
		US	6103868				
END OF ANNEX							

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU00/01210

A. CLASSIFICATION OF SUBJECT MATTERInt. Cl. ⁷ C08J 5/18; C08F 6/12; C30B 1/02; H01L 21/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC C08J 5/18; C08F 6/12; C30B 1/02; H01L 21/20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

AU: IPC AS ABOVE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DERWENT WPAT AND JPAT: NANOPARTICL: NANOPARTICLE FILM LINK: BIND: CROSSLINK:

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DERWENT WPAT ONLINE ABSTRACT NO. 99-215863/19 DE 19741496 A (BASF AG) 25 MARCH 1999 — ABSTRACT & WO 99/15587 WHOLE DOCUMENT	1-38
X	DERWENT WPAT ONLINE ABSTRACT NO. 1999-372164/32 DE 1975690 A (FRAUNHOFER GES FOERDERUNG ANGEWANDTEN) 1 JULY 1999 — ABSTRACT	1-38

☒ Further documents are listed in the continuation of Box C
 ☒ See patent family annex

* Special categories of cited documents: "A" Document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search

10 November 2000

Date of mailing of the international search report

23 NOV 2000

Name and mailing address of the ISA/AU

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU00/01210

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	AU 29947/99 A (WM. MARSH RICE UNIVERSITY) 27 SEPTEMBER 1999 SEE PAGES 1-21; CLAIMS 1-43	1-38
A	US 5 711 803 A (MARTIN PEHNT ET AL) 27 JANUARY 1998 SEE COLUMNS 1-4	1-38
A	AU 17433/97 A (HEATH JAMES R ET AL) 28 JULY 1997 SEE PAGES 1-29; CLAIMS 1-30	1-38